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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/624,471	07/23/2003	Laura Hadden	71493-1165 /aba	7439

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SMART & BIGGAR
P.O. BOX 2999, STATION D
900-55 METCALFE STREET
OTTAWA, ON K1P5Y6
CANADA

EXAMINER	
AZEMAR, GUERSSY	
ART UNIT	PAPER NUMBER
2613	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/23/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/624,471	HADDEN ET AL.	
	Examiner	Art Unit	
	Guerssy Azemar	2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 August 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-37* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-37* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *23 August 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-37 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-24, 26, 28, 31, 32, 34-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Levandovsky et al. (7,095,956) in view of Bergano et al. (6,317,238).

(1) With respect to claims 1, 24, 26, 28, 31, 32, 34-37:

Levandovsky et al. teach in a network comprising a plurality of node interconnected by optical fiber segments (shown in figure 1), a method of determining the viability of a signal path through the network (abstract, the reference determines the validity of the path), comprising the steps of:

identifying at least one optical effect that impacts the viability of the signal path (column 5, lines 52-56, the reference teaches dispersion as one of the optical effects);

assigning a performance value to the signal at its introduction into the network (column 3, line 51, SNR is calculated at each element beginning at the introduction of the signal at the first element);

for each successive segment in the signal path, recalculating the impact of each identified optical effect on the performance value as the signal passes through the segment (column 1, lines 64, SNR values are added cumulatively); and

comparing the resulting performance of the signal after passage along the signal path against an acceptable threshold to determine the path's viability (column 2, lines 1-3).

However, Levandovsky et al. do not teach identifying at least one base variable upon which the identified optical effects depend;

approximating each identified optical effect as a function of each identified base variable;

Bergano et al. teach identifying at least one base variable upon which the identified optical effects depend (the reference teaches Dispersion as an optical effect and the length of a span as a base variable as shown in figure 4);

approximating each identified optical effect as a function of each identified base variable (the reference graphs the Dispersion as a function of the length a span);

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use the method of approximating an optical effect as a function of a base variable taught by Bergano et al. in order to determine the viability of a path taught by Levandovsky et al. because it provides a cumulative value of the dispersion along the path, which can be used to determine the performance of the system or to compensate for the dispersion effect.

With respect to claims 26 and 31, the applicant further claims a communicator for communicating the resulting performance value along the at least one downstream segment to the corresponding downstream node, and a receiver for receiving previous performance value from the at least one upstream node along the segment interconnecting the two nodes.

Neither Levandovsky et al. ~~not~~ nor Bergano et al. teach the communicator and the receiver, however, they teach the cumulative impact of optical effects on a path, which means that a previous measurement is added to the next at another node. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to communicate the performance values in order to be able to calculate the cumulative effect on the path which will be use to validate the path.

(2) With respect to claims 2, 3:

Levandovsky et al. teach calculating the resulting performance of a signal through the node while passing through the node at which the segment terminates (column 3, lines 49 – 52, NE means network element or link).

calculating the resulting performance of the signal resulting from the optical effects encountered while passing through the segment (column 3, lines 49 – 52, NE means network element or link).

However Levandovsky et al. do not teach calculating the value of each identified base variable;

calculating the impact of each identified optical effect in the segment based on the calculated value of each identified base variable;

Bergano et al. teach calculating the value of each identified base variable (graph of figure 4, graph 402 shows dispersion vs length for one span, in which length of a span is the base variable);

calculating the impact of each identified optical effect in the segment based on the calculated value of each identified base variable (graph of figure 4, graph 402 shows dispersion vs. length for one span, in which dispersion is the optical effect);

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to calculate the resulting optical effect of one span as taught by Bergano et al. in the system taught Levandovsky et al. in order to be able to approximate linearly the resulting performance for any span of fiber.

(3) With respect to claim 4:

Levandovsky et al. teach the method further comprising the steps of:

measuring the current performance of the signal (column 3, lines 50, 51, SNR is measured at each element); and

re-calculating the resulting performance of the signal using a measure of the current performance (column 1, line 64-66, the measurements are cumulative, therefore the previous measurements are added to the next till the end of the path).

(4) With respect to claims 5-8:

Levandovsky et al. teach a base variable is the fiber type (appendix, page 21, line 28, fiber type a design parameter that also affect the value of dispersion other than the length of the span)

However, Levandovsky et al. do not teach a base variable is the length of a segment, number of wavelengths in the segment, length of each fiber span within the segment.

Bergano et al. teach a base variable is a length of segment (shown in figure 4).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use the length of a segment taught by Bergano et al. as the base variable taught by Levandovsky et al. in order to calculate the impact of the optical effect on the fiber span.

Although neither Levandovsky et al. nor Bergano et al. teach a base variable is the number of wavelengths in the segment and, length of each fiber span within the segment, it would have been obvious to one of ordinary skill in the art to use those parameters in the system taught by Levandovsky et al. if the case of WDM system where there are many wavelengths on a fiber span or a system where there are many spans in a link.

(5) With respect to claims 9-18:

Levandovsky et al. teach the method wherein the effect is dispersion, self-phase modulation, cross-phase modulation, four-wave mixing, a noise effect, amplified spontaneous emission, stimulated Brillouin scattering, stimulated Raman scattering (column 5, lines 51 – 56, appendix, page 23, lines 2 - 10).

Although the reference didn't explicitly enumerate distortion and multi-path interference, it did include in the group any effect that affect the shape of the signal

pulse, therefore one skilled in the art would have clearly included the latter effect in the equation.

(6) With respect to claim 19:

Levandovsky et al. teach all of the subject matter as described above except for the method wherein the approximated function is linear.

However, Bergano et al. teaches the method wherein the approximated function is linear (402 in figure 4).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use the linear function taught by Bergano et al. in the system taught by Levandovsky et al. because the linear function provides the capability to approximate the impact of the optical effect for any other length of fiber span.

(7) With respect to claims 20-22:

Levandovsky et al. teach the method wherein the performance is measured by bit error rate, signal-to-noise ratio, and Q (column 1, lines 58, 65, appendix page 28, line 10).

(8) With respect to claim 23:

Levandovsky et al. teach the method wherein the performance is measured by an accumulation of penalty points (column 1, lines 64, 65, every value that is added to the noise figure is considered a penalty point).

4. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Levandovsky et al. (7,095,956) and Bergano et al. (6,317,238) as applied to claim 24 above, and further in view of Chiniwala et al. (6,175,622).

Levandovsky et al. and Bergano et al. teach all of the subject matter as described above except for the apparatus wherein the node is an OAM node associated with the network.

Chiniwala et al. teach for the apparatus wherein the node is an OAM node associated with the network (76 in figure 1, column 4, lines 3-5).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use the OAM node as taught by Chiniwala et al. in the network taught by Levandovsky et al. in order to manage the performance of the network.

5. Claims 27, 29, 30, 32, 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Levandovsky et al. (7,095,956) and Bergano et al. (6,317,238) as applied to claim 24 above, and further in view of Beine et al. (6, 701,087).

(1) With respect to claims 27, 29, 30, 32, 33:

Levandovsky et al. and Bergano et al. teach all of the subject matter as described above except for the apparatus wherein the performance value is communicated along an OSC channel in the segment.

However, Beine et al. teach an apparatus to communicate parameters via an OSC channel (column 25, lines 49-50).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use the OSC channel taught by Beine et al. in the network taught by Levandovsky et al. in order to communicate the performance value.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Guerssy Azemar whose telephone number is (571) 270-1076. The examiner can normally be reached on Mon-Fri (every other Fridays off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Vanderpuye can be reached on (571) 272-3078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Guerssy Azemar

02/18/2007

KENNETH VANDERPUYE
SUPERVISORY PATENT EXAMINER